What is claimed is:

1. A method of etching a nitride-based bottom etch stop layer in a copper damascene structure comprising:

etching the bottom etch stop layer using a high density, high radical concentration plasma containing fluorine and oxygen.

2. A method according to claim 1, wherein radical-to-ion ratio in the high density, high radical concentration plasma is greater than about 10:1.

3. A method according to claim 1, wherein the nitride-based bottom etch stop layer is silicon nitride.

4 A method according to claim 1, wherein the nitride-based bottom etch stop layer is oxynitride.

5. A method according to claim 1, wherein the fluorine is provided by at least one of CF_4, CHF_3, SF_6, NF_3, C_2F_6, C_4F_8, CH_2F_2, CH_3F, and C_4F_6.

6. A method according to claim 1, wherein the high density plasma further comprises N_2 and any one of inert gases.

7. A method according to claim 1, wherein the copper damascene structure is a via step.

8. A method according to claim 1, wherein the copper damascene structure is a single damascene structure.

9. A method according to claim 1, wherein the copper damascene structure is a non-intermediate etch stop layer dual damascene.